

Study Guide

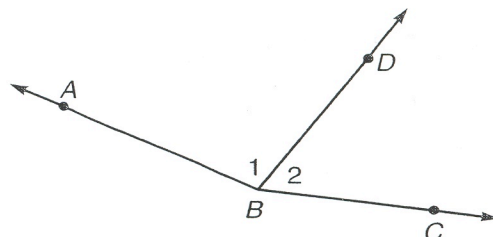
1.5
Blue Book

The Angle Addition Postulate

According to the Angle Addition Postulate, if D is in the interior of $\angle ABC$, then $m\angle ABD + m\angle DBC = m\angle ABC$.

Example: In the figure at the right, $m\angle ABC = 160$, $m\angle 1 = x + 14$, and $m\angle 2 = 3x - 10$. Find the value of x .

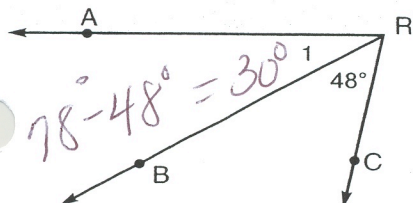
$$\begin{aligned} m\angle 1 + m\angle 2 &= m\angle ABC \\ (x + 14) + (3x - 10) &= 160 \\ 4x + 4 &= 160 \\ 4x &= 156 \\ x &= 39 \end{aligned}$$



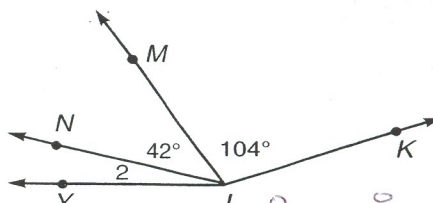
Solve.

$m\angle 1 = 30^\circ$

1. Find $m\angle 1$ if $m\angle ARC = 78$.

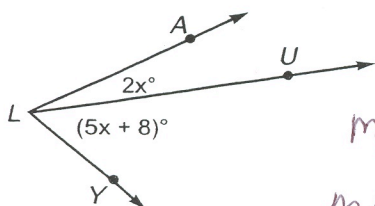


2. Find $m\angle 2$ if $m\angle YJK = 160$.



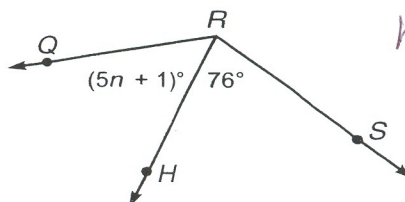
$m\angle 2 = 160 - 104 - 42 = 14^\circ$

3. Find x if $m\angle ALY = 71$.



$x = 9$
 $m\angle ALU = 18^\circ$
 $m\angle ULY = 53^\circ$

4. Find n if $m\angle QRS = 12n$.



$n =$

Let Q be in the interior of $\angle POR$. Use the Angle Addition Postulate to solve for x . Find the measure of each angle.

14. $m\angle POQ = (x + 4)^\circ$
 $m\angle QOR = (2x - 2)^\circ$
 $m\angle POR = 26^\circ$

15. $m\angle POQ = (3x + 7)^\circ$
 $m\angle QOR = (5x - 2)^\circ$
 $m\angle POR = 61^\circ$

16. $m\angle POQ = (\frac{1}{3}x + \frac{1}{3})^\circ$
 $m\angle QOR = (2x + \frac{4}{3})^\circ$
 $m\angle POR = (5x - 1)^\circ$

$x = 8$

$m\angle POQ = 12^\circ$
 $m\angle QOR = 14^\circ$

$x = 7$

$m\angle POQ = 28^\circ$
 $m\angle QOR = 33^\circ$